

AMENDMENTS TO THE CLAIMS

1. (currently amended) An interferential current treatment apparatus comprising:

~~means for providing a plurality of independent electrical current sources;~~

a first electrical circuit having a first current source, a first variable base frequency, a first beat frequency, and a first pair of treatment electrodes, wherein the first pair of treatment electrodes are configured for selective coupling to opposing sides of a patient's body with respect to a spinal column of the patient to allow the first electrical circuit to interact with and stimulate a nerve span of the patient's spinal column~~coupled to a first independent electrical current source, capable of establishing a circuit path operating at a first frequency when attached to a patient;~~

a second electrical circuit having a second current source, a second variable base frequency, a second beat frequency, and a second pair of treatment electrodes, wherein the second pair of treatment electrodes are configured for selective coupling to opposing sides of the patient's body with respect to the spinal column of the patient to allow the second electrical circuit to interact with and stimulate the nerve span of the patient's spinal column~~coupled to a second independent electrical current source, capable of establishing a second circuit path operating at a second frequency different than the first frequency when attached to a patient, wherein a first interferential beat frequency is established between the first and second circuit paths;~~

a third electrical circuit having a third current source, a third variable base frequency, a third beat frequency, and a third pair of treatment electrodes, wherein the third pair of treatment electrodes are configured for selective coupling to opposing sides of the patient's body with respect to the spinal column of the patient to allow the third


electrical circuit to interact with and stimulate the nerve span of the patient's spinal column~~coupled to a third independent electrical current source, capable of establishing a third circuit path operating at a third frequency generally greater than the first and second frequencies when attached to a patient; and~~

a fourth electrical circuit having a fourth current source, a fourth variable base frequency, a fourth beat frequency, and a fourth pair of treatment electrodes, wherein the fourth pair of treatment electrodes are configured for selective coupling to opposing sides of the patient's body with respect to the spinal column of the patient to allow the fourth electrical circuit to interact with and stimulate the nerve span of the patient's spinal column, and wherein current from the first, second, third and fourth electrical circuits selectively provides interferential treatment to the nerve span of the patient's spinal column~~coupled to a fourth independent electrical current source, capable of establishing a fourth circuit path operating at a fourth frequency greater than the third frequency when attached to a patient, wherein a second interferential beat frequency is established between the third and fourth circuit paths.~~

2. (currently amended) The apparatus according to claim 1 further comprising frequency varying means; coupled to the first, second, third and fourth current sources providing means, to vary a beat ~~the~~ frequency of at least one of the electrical circuits ~~path~~ relative to another of the electrical circuits ~~path~~ during use ~~thereby varying the beat frequency between the two circuit paths.~~

3. (currently amended) The apparatus according to claim 1 wherein ~~the~~ a beat frequency of between at least two of the pairs of treatment electrodes operates in a range of 0-200 Hertz (Hz).

4. (currently amended) The apparatus according to claim 1 wherein the first base frequency is ~~set generally at~~ approximately 1850 Hertz.

 5. (currently amended) The apparatus according to claim 2 wherein the frequency varying means ~~is capable of~~ selectively varies the beat frequency either before treatment or during treatment of the patient.

6. (currently amended) The apparatus according to claim 1 further comprising means for displaying the ~~frequency~~ frequencies and elapsed time of use of each of the ~~plurality of current sources in use.~~

7. (currently amended) The apparatus according to claim 1 wherein an interferential ~~third~~ beat frequency is established between the first electrical circuit ~~path~~ and the third electrical circuit ~~path when the circuit paths are proximate one another or overlapping.~~

8. (currently amended) The apparatus according to claim 1 wherein at least some of the current ~~providing means~~ sources are ~~generates~~ alternating current ~~for each current sources as applied to the patient and further comprises a signal generator to applies~~ a frequency on the alternating current ~~for each of the independent~~ alternating current sources.

9. (currently amended) The apparatus according to claim 8 ~~wherein the current providing means further~~ further ~~comprising~~ es display and control means, coupled to the signal generator, to enable an operator to control ~~at~~ the current level and frequencyies of each current source and to display the same to the operator.

10. (currently amended) An interferential current treatment apparatus comprising:

~~means for providing a plurality of independent electrical current sources;~~

a first electrical circuit having a first current source, a first variable base frequency, a first beat frequency, and a first pair of treatment electrodes, wherein the first pair of treatment electrodes are configured for selective coupling to opposing sides of a patient's body with respect to a spinal column of the patient to allow the first electrical circuit to interact with and stimulate a nerve span of the patient's spinal column~~coupled to a first independent electrical current source, capable of establishing a circuit path having a first frequency when attached to a patient;~~

a second electrical circuit having a second current source, a second variable base frequency, a second beat frequency, and a second pair of treatment electrodes, wherein the second pair of treatment electrodes are configured for selective coupling to opposing sides of the patient's body with respect to the spinal column of the patient to allow the second electrical circuit to interact with and stimulate the nerve span of the patient's spinal column, and wherein the second base frequency is ~~coupled to a second independent electrical current source, capable of establishing a second circuit path having second frequency generally within 200 Hertz of the first~~ base frequency when attached to

the patient, wherein a first interferential beat frequency is established between the first and second electrical circuits ~~paths~~;

a third electrical circuit having a third current source, a third variable base frequency, a third beat frequency, and a third pair of treatment electrodes, wherein the third pair of treatment electrodes are configured for selective coupling to opposing sides of the patient's body with respect to the spinal column of the patient to allow the third electrical circuit to interact with and stimulate the nerve span of the patient's spinal column, and wherein the third base frequency is ~~coupled to a third independent electrical current source, capable of establishing a third circuit path having a third frequency~~ generally greater than the first base frequency by at least 500 Hz when attached to the patient; and

a fourth electrical circuit having a fourth current source, a fourth variable base frequency, a fourth beat frequency, and a fourth pair of treatment electrodes, wherein the fourth pair of treatment electrodes are configured for selective coupling to opposing sides of the patient's body with respect to the spinal column of the patient to allow the fourth electrical circuit to interact with and stimulate the nerve span of the patient's spinal column, and wherein the fourth base frequency is ~~coupled to a fourth independent electrical current source, capable of establishing a fourth circuit path having a fourth frequency~~ no more than 200 Hertz greater than the third base frequency when attached to a patient, wherein a second interferential beat frequency is established between the third and fourth electrical circuits ~~paths~~.

11. (currently amended) The apparatus according to claim 10 further comprising frequency varying means; coupled to the first, second, third and fourth current sources ~~providing means, to vary a beat~~ the frequency of at least one of the electrical circuits ~~path~~ relative to another of the electrical circuits ~~path~~ during use ~~thereby varying the beat frequency between the two circuit paths.~~

12. (currently amended) The apparatus according to claim 10 wherein the first inferential beat frequency ~~for the first and second pair of electrodes~~ is 2-6 Hz.

13. (currently amended) The apparatus according to claim 12 wherein the second inferential beat frequency ~~for the third and fourth pair of electrodes~~ is 8-12 Hz.

14. (currently amended) The apparatus according to claim 10 wherein the first base frequency is set generally at 1850 Hertz.

15. (currently amended) The apparatus according to claim 11 wherein ~~the a~~ frequency varying means ~~provides frequency variations~~ selectively varies the beat frequency either before treatment or during treatment of the patient.

16. (currently amended) The apparatus according to claim 10 further comprising means for displaying the ~~frequency~~ frequencies and elapsed time of use of each of the ~~plurality of current sources in use.~~

17. (currently amended) The apparatus according to claim 10 wherein ~~a third~~an interferential beat frequency is established between the first electrical circuit ~~path~~ and the third electrical circuit ~~path~~ ~~when the circuit paths are proximate one another or overlap~~.

18. (currently amended) The apparatus according to claim 10 wherein at least some of the current ~~providing means~~ sources are alternating current sources and comprising a signal generator to apply applies a frequency on ~~an~~ the alternating current of the alternating ~~for each of the independent current sources~~.

19. (currently amended) The apparatus according to claim 10 ~~wherein the current providing means further comprising~~ display and control means, coupled to the signal generator, to enable an operator to control the a current level and ~~frequencies~~ frequency of each current source and to display the same to the operator.

20. (currently amended) An interferential current treatment apparatus comprising:

- a power control unit that provides a plurality of electrical current circuits from a source electrical current;
- a central processing unit, coupled to the power control unit, to define the voltage range and current level for each of the plurality of electrical current circuits;
- a signal processing unit, coupled to the central processing unit and each of the plurality of electrical circuits, to provide an alternating current frequency for each of the plurality of electrical current circuits;

a first electrical circuit having a first current source, a first variable base frequency, a first beat frequency, and a first pair of treatment electrodes, wherein the first pair of treatment electrodes are configured for selective coupling to opposing sides of a patient's body with respect to a spinal column of the patient to allow the first electrical circuit to interact with and stimulate a nerve span of the patient's spinal column~~coupled to a first independent electrical current circuit, capable of establishing a circuit path operating at a first frequency when attached to a patient;~~

a second electrical circuit having a second current source, a second variable base frequency, a second beat frequency, and a second pair of treatment electrodes, wherein the second pair of treatment electrodes are configured for selective coupling to opposing sides of the patient's body with respect to the spinal column of the patient to allow the first electrical circuit to interact with and stimulate the nerve span of the patient's spinal column~~coupled to a second independent electrical current circuit, capable of establishing a second circuit path operating at a second frequency different than the first frequency when attached to a patient, wherein a first interferential beat frequency is established between the first and second electrical circuits~~paths;

a third electrical circuit having a third current source, a third variable base frequency, a third beat frequency, and a third pair of treatment electrodes, wherein the third pair of treatment electrodes are configured for selective coupling to opposing sides of the patient's body with respect to the spinal column of the patient to allow the third electrical circuit to interact with and stimulate a nerve span of the patient's spinal column~~coupled to a third independent electrical current circuit, capable of establishing a~~

~~third circuit path operating at a third frequency generally greater than the first frequency when attached to a patient; and~~

a fourth electrical circuit having a fourth current source, a fourth variable base frequency, a fourth beat frequency, and a fourth pair of treatment electrodes, wherein the fourth pair of treatment electrodes are configured for selective coupling to opposing sides of the patient's body with respect to a spinal column of the patient to allow the fourth electrical circuit to interact with and stimulate the nerve span of the patient's spinal column~~coupled to a fourth independent electrical current circuit, capable of establishing a fourth circuit path operating at a fourth frequency greater than the third frequency when attached to a patient, wherein a second interferential beat frequency is established between the third and fourth electrical circuits paths.~~

21. (currently amended) The apparatus according to claim 20 wherein the signal processor is capable of varying ~~the a~~ a frequency of at least one of the electrical circuits path relative to another of the electrical circuits path during use ~~thereby varying the beat frequency between the two circuit paths.~~

22. (canceled)

23. (currently amended) The apparatus according to claim 20 wherein the first base frequency is set at generally 1850 Hertz.

24. (currently amended) The apparatus according to claim 20 further comprising means, coupled to the central processing unit, for enabling an operator to set ~~the~~a current and frequency for each of the ~~plurality of current~~electrical circuits.

25. (currently amended) The apparatus according to claim 20 further comprising means, coupled to the central processing unit, for displaying ~~the~~a frequency and elapsed time of use of each of the ~~plurality of current~~ sources in use.

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26. (currently amended) The apparatus according to claim 20 wherein a third interferential beat frequency is established between the first electrical circuit ~~path~~ and the third electrical circuit ~~path~~ ~~when the circuit paths are generally proximate one another or overlapping.~~

27. (currently amended) The apparatus according to claim 20 wherein the first interferential beat frequency ~~for the first and second pair of electrodes~~ is 2-6 Hz.

28. (currently amended) The apparatus according to claim 27 wherein the second interferential beat frequency ~~for the third and fourth pair of electrodes~~ is 8-12 Hz.
